

REMARKS/ARGUMENTS

Claims 1-3 and 11-13 stand rejected, with claims 4-10 and 14-20 objected to in the outstanding Official Action. Claims 1-20 have been cancelled without prejudice and newly written claims 21-41 offered for consideration. Accordingly, the only claims remaining in this application are claims 21-41.

The Examiner's indication of acceptability of Applicants' originally filed formal drawings is appreciated. Similarly, the Examiner's acknowledgment of Applicants' claim for foreign priority and receipt of the certified copy of the priority document is very much appreciated. Finally, the Examiner's consideration of the two previously filed Information Disclosure Statements and consideration of the prior art cited therein is appreciated.

Claims for original examination

The present application is a national phase entry of PCT/GB00/03243 which on June 11, 2001 had an International Preliminary Examination Report mailed. In the Notice of Acceptance mailed by the U.S. PTO on May 1, 2002, the U.S. Patent Office acknowledges receipt of the International Preliminary Examination Report and therefore should have examined only claims 19 and 20 as originally filed (and not original claims 1-18) and instead claims 1-18 as amended in the PCT application prior to entry of national phase in the United States. However, it appears that the Examiner examined original claims 1-20 (in the present action, the Examiner rejects claim 11 as the independent method claim when in the correct claims on file the independent method claim is claim 9).

As a result, and to avoid any additional confusion, Applicants have cancelled claims 1-20 and offered new amended claims 21-41 as follows. Claims 21-36 correspond to the original

claims 1-18, with claims 2 and 4 deleted and various of these claims amended. Claims 37 and 38 correspond to original claims 19 and 20, with claim 19 being amended. Claims 39-41 are newly written claims covering the subject matter of the present invention.

Thus, while the newly submitted claims correspond generally to the original PCT claims, several have been amended to more clearly set forth Applicants' claimed invention and consideration thereof is respectfully requested.

Information Disclosure Statement

Applicants also submit herewith an Information Disclosure Statement of prior art which has come to the attention of the applicant and consideration thereof in conjunction with this patent application is respectfully requested. The appropriate fee is enclosed herewith.

Response to the rejections

Former claims 1-3 stand rejected under 35 USC §102 as being anticipated by Butler (U.S. Patent 5,446,284). While the Examiner alleges that the Butler patent teaches "a sensing material (silicon diode)" which is carried on the underside of a support element, this contention is respectfully traversed.

A review of the Butler patent and in particular Figure 3, as well as column 3, lines 51-61 thereof, indicates that "detector element 10" is supported on top of "legs 18" and therefore does not meet the limitation of Applicants' original claims of a "resistive sensing material (14)" located on "the underside of the support element (16)" (emphasis added). Quite clearly, the existence of the phantom lines denoting the hidden edge of support legs 18 in Figure 3 of Butler clearly establishes that the detector element 10 is on top of the support legs and not on the "underside" as suggested by the Examiner.

Accordingly, any further rejection of the original claims or Applicants' newly written claims 21-41 under 35 USC §102 as being anticipated by Butler is respectfully traversed. It is noted that Applicants' newly written claims also specify that the support element carries "on its underside a resistive sensing material" and therefore this structure is not shown by the Butler patent which uses a diode bolometer and not a resistive element. Should the Examiner contend that the Butler patent discloses any sensing material carried underneath support elements, he is respectfully requested to point out both the figure and the column and line number discussing that figure which supports his conclusion.

Former claims 11-13 stand rejected under 35 USC §102 as being anticipated by Shorrocks (U.S. Patent 5,942,791). While original method claim 11 was amended in the PCT International application, because of the doubt as to whether it was examined, this claim has been reinstituted in its original form as newly written claim 29.

The Shorrocks device utilizes a ferroelectric material to provide its electrical output based upon radiation on the ferroelectric layer 14. The ferroelectric layer 14, as shown in Figures 2 and 3 of Shorrocks, comprises a top electrode 16, a bottom electrode 20 and a ferroelectric layer 18. As discussed in the Shorrocks reference, the microbridge 14 comprising the ferroelectric layer and its top and bottom electrodes "is supported on bridge supports 22." (Column 3, lines 49 and 50).

Thus, the Shorrocks sensing device (ferroelectric microbridge 14) is supported on top of the "bridge supports 22." Thus, any method for creating the structure in the Shorrocks patent cannot be the method creating Applicants' claimed invention in which the sensing material is deposited and then support material is deposited on top of the sensing material and then

sacrificial material under the sensing material is removed, thereby forming a support element with sensing material underneath the support element.

While the Examiner states that Shorrocks leaves “support material with the sensing material on its lower surface, substantially free standing above the substrate,” this is not believed to be shown anywhere in the Shorrocks reference and clarification is respectfully requested. It is noted that Figure 6 of Shorrocks merely teaches flowable layer 44 placed on top of sacrificial layer 42 which in turn is located on the read-out circuit 10, as discussed at column 4, lines 31-33. As shown in Figure 9, the further processing in Shorrocks leaves gap 54 between the upper ferroelectric sensing layer and the lower circuitry layer, but the sensing element 14 is still located on top of support legs 22. Again, should the Examiner believe some other portion of the Shorrocks reference discloses former claim 11 and current claim 29, she is respectfully requested to point out the figure, as well as the column and line numbers discussing that figure in which Applicants’ claimed method is disclosed.

In view of the above, it is clear that neither Butler nor Shorrocks have anything to do with Applicants’ location of a sensing element on the underside of the support material as set out in Applicants’ apparatus claims 21-28 and 37-41 or by Applicants’ claimed method as set out in claims 29-36. Not only is the sensing element/support element relationship specified in Applicants’ claims missing from the cited prior art references, they do not disclose a resistive sensing material in this location which is also specified in Applicants’ claims. Accordingly, any rejection of newly written claims 21-41 over either the Butler or Shorrocks references is respectfully traversed.

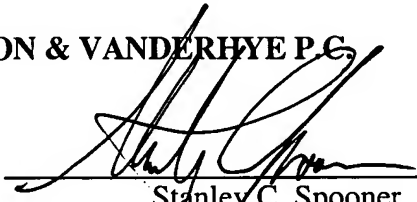
GILLHAM et al
Appl. No. 10/069,363
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Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 21-41 are in condition for allowance and notice to that effect is respectfully requested. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, she is respectfully requested to contact Applicants' undersigned representative.

Respectfully submitted,

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